

Remarks

In the present response, claims 1-12, 15-19, 27-29, and 31-32 are presented for examination.

Drawing Objections

The examiner objects to the drawings for various reasons. Applicants respectfully traverse and address each of these objections.

First, the “electrical device” recited in claims 1, 5-6, and 27 is allegedly not shown in the drawings. Figure 1 shows multiple electrical devices, such as monitor 14 with a radio module 20, desktop computer 12 with a radio module 20, peripheral 16 with a radio module 20, and notebook computer 18 with a radio module 22. Support is found at least in paragraphs [0017] and [0018].

Second, the recitation “radio module is coupled to an enclosure and the electromagnetic shield extends from the printed circuit board to the enclosure” recited in claim 12 is allegedly not shown in the drawings. Figures 3-5 show a radio module 20 coupled to an enclosure 36 (being side of computer 12 in Fig. 1). An electromagnetic shield 32 extends from a printed circuit board 28 to the enclosure 36. Support is found at least in paragraphs [0019] and [0020].

Third, the recitation “antenna is disposed within the enclosure” recited in claim 16 is allegedly not shown in the drawings. As shown at least in Figs. 3-5, the radio module 20 includes an antenna 30. Figure 1 shows the radio module 20 enclosed in a monitor 14, a desktop computer 12, and a peripheral 16.

Fourth, the “conductive coating” recited in claim 10 and the “conductive coated plastic foam” recited in claim 31 are allegedly not shown in the drawings. Figures 4 and 5 show an antenna housing 32 having the claimed coating. As described in paragraph [0020] of the specification:

In this embodiment, the antenna housing 32 is fabricated of a conductively-coated plastic foam. In addition, the conductively-coated plastic foam isolates the antenna electromagnetically from the components 33 within the desktop computer 14 external to the radio module 20, thereby shielding the

antenna 30 from undesirable noise produced by the components 33 within the desktop computer 14.

Fifth, the drawings are objected to because reference numeral 26 in Figs. 3-6 allegedly is used to designate both the shield and the radio transceiver. In Figs. 3-6, reference numeral 26 consistently points to the same element: the transceiver. Support in the specification is found at least at paragraphs [0019], [0020], [0021], and [0023].

Applicants respectfully ask the examiner to withdraw the objections to the drawings.

Objection Specification

The specification is objected to because character 26 in paragraphs [0019] and [1123] allegedly designate this character as being both a “radio transceiver” and a “radio transceiver shield.” These paragraphs never use the term “radio transceiver shield” as alleged. If this rejection is maintained, Applicants respectfully ask for a citation to a paragraph and line number.

Claim Objections

Claims 2 and 14 are objected to because it is allegedly not clear how the device “radio transceiver operates as an electromagnetic shield” without redefined in the specification. Applicants respectfully traverse.

Paragraphs [0020] and [0024] – [0027] explain how the antenna housing and radio transceiver operate as electromagnetic shields. One skilled in the art would read the disclosure, review the figures, and understand the teachings in paragraphs [0020] and [0024] – [0027].

Claim Rejections: 35 USC § 102(b)

Claims 1-11, 27-29, and 32 are rejected under 35 USC § 102(b) as being anticipated by USPN 6,236,366 (Yamamoto). These rejections are traversed.

The claims recite one or more elements not taught or even suggested in Yamamoto. Some examples are provided below for the independent claims.

As one example, claim 1 recites a radio module having three elements: a radio transceiver, an antenna, and an electromagnetic shield. The electromagnetic shield is disposed around the antenna. However, “the radio transceiver is externally located outside the electromagnetic shield.” Claim 27 recites disposing a radio transceiver outside of the shield and adjacent to the antenna so the radio transceiver operates as an electromagnetic shield for the antenna. Yamamoto does not teach these elements.

Figure 1 in Yamamoto shows a semiconductor module with a built in antenna 4. A sealing cover 3 covers the antenna 3 and also circuits 6 and 7. The circuits 6 and 7 are located inside the cover 3.

Yamamoto further explains that the circuit in Fig. 4A can function as a radio transmitter or receiver signal processing circuit when it acts as a radio receiver (see column 8, lines 63-67). This circuit of Fig. 4A, however, is also located inside of the cover 3.

Figures 7A and 7B show embodiments for preventing electromagnetic interference. Here, the antenna 4 and circuit 6 are also located inside the cover 3.

Figures 8A and 8B “show an application of the semiconductor module with a built-in antenna including the equivalent circuit of FIG. 4B” (see column 10, lines 33-35). Again, the antenna and radio transmitter are all located inside the cover 3.

In order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he elements must be arranged as required by the claim,” see M.P.E.P. § 2131, citing *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). For at least these reasons, independent claims 1 and 27 and their dependent claims are allowable over Yamamoto.

Claim Rejections: 35 USC § 103(a)

Claim 31 is rejected under 35 USC § 103(a) as being unpatentable over Yamamoto in view of USPN 5,210,541 (Pett). This rejection is traversed.

As explained above, Yamamoto does not teach or suggest all of the elements of independent claim 27. Pett fails to cure these deficiencies. Thus for at least the reasons given above with respect to independent claim 27, dependent claim 31 is allowable over Yamamoto in view of Pett.

Claim Rejections: 35 USC § 103(a)

Claim 12-19 are rejected under 35 USC § 103(a) as being unpatentable over USPN 6,417,817 (Pirila) in view of Yamamoto. These rejections are traversed.

The independent claims recite one or more elements that are not taught or suggested in Pirila in view of Yamamoto. These missing elements show that the differences between the combined teachings in the art and the recitations in the claims are great. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art. Some examples are provided below for independent claim 12.

As one example, independent claim 12 recites a radio transceiver located outside the electromagnetic shield and adjacent to the antenna and providing an electromagnetic shield for the antenna.

As one example, the independent claims recite that the foam is between the cage and enclosure. Pirila in view of Yamamoto do not teach or suggest an embodiment wherein foam is between the cage and the enclosure.

Pirilia shows the antenna and radio transceiver both inside the same enclosure. Nowhere does Prilia teach or even suggest that the radio transceiver is located outside the electromagnetic shield and adjacent to the antenna to provide an electromagnetic shield for the antenna.

Figure 1 in Yamamoto shows a semiconductor module with a built in antenna 4. A sealing cover 3 covers the antenna 3 and also circuits 6 and 7. The circuits 6 and 7 are located inside the cover 3.

Yamamoto further explains that the circuit in Fig. 4A can function as a radio transmitter or receiver signal processing circuit when it acts as a radio receiver (see column 8, lines 63-67). This circuit of Fig. 4A, however, is also located inside of the cover 3.

Figures 7A and 7B show embodiments for preventing electromagnetic interference. Here, the antenna 4 and circuit 6 are also located inside the cover 3.

Figures 8A and 8B "show an application of the semiconductor module with a built-in antenna including the equivalent circuit of FIG. 4B" (see column 10, lines 33-35). Again, the antenna and radio transmitter are all located inside the cover 3.

The differences between the claims and the teachings in the art are great since the references fail to teach or suggest all of the claim elements. As such, the pending claims are not a predictable variation of the art to one of ordinary skill in the art.

For at least these reasons, claims 12-19 are allowable over the art of record.

CONCLUSION

In view of the above, Applicants believe that all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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